

Nevada Division of Environmental Protection Bureau of Federal Facilities



Summary of Program Functions

June 2003

Prepared by John B. Walker

Readers Note: This paper describes program functions for the Bureau of Federal Facilities. It identifies the regulated community and key participants in each program area. It also defines program activities and related issues.

Introduction

In Nevada, the U.S. Department of Energy (DOE) is conducting environmental restoration and waste management activities at the Nevada Test Site (NTS), the Tonopah Test Range (TTR), the Central Nevada Test Area (CNTA), and the Project Shoal Area. These activities focus on: (1) Identifying the nature and extent of contamination in soils, groundwater and at industrial sites; (2) determining potential risk to the public and the environment, and; (3) performing the necessary corrective actions in compliance with applicable regulatory guidelines and requirements.

The Federal Facility Agreement and Consent Order ([FFACO](#)), the Federal Facility Compliance Act Consent Order ([FFCAAct](#)), and the recently negotiated [LOI](#) (Letter of Intent Agreement) are the primary “regulatory drivers” that define NDEP’s authority over DOE cleanup and waste management activities at the above referenced [federal facilities](#). New and ongoing activities are regulated in accordance with appropriate state regulations (water pollution control & solid & hazardous waste) in accordance with the terms and conditions of the Agreement in Principal ([AIP](#)).

Program Functions

1. Underground Test Area Project (UGTA) and Offsites
 2. Industrial Sites Project
 3. Radioactive, Hazardous & Solid Waste Management at the NTS
 4. Contaminated Soils
 5. Environmental Monitoring & Programmatic Oversight
 6. Department of Defense (DoD) Programs
-

1. Underground Test Area Project (UGTA) and Offsites: Contaminated groundwater beneath the NTS and Offsite locations was caused by underground nuclear testing conducted near or within the groundwater. On NTS alone, NDEP has estimated that over 300 square miles of groundwater is contaminated; there

are a number of radionuclides of concern but initially tritium will be used as a contaminate indicator. (Tritium is “fast moving” and thus an important radionuclide for tracking movement of contaminants in groundwater).

DOE is addressing the contamination through the UGTA program (i.e., hydrogeologic data analysis acquired from existing and newly developed wells combined with predictive computer modeling). The overall objective of the UGTA investigation is to define the site-specific hydrologic boundaries encompassing groundwater resources that may be unsafe for domestic or municipal use. The boundaries will also define the area in which contaminants are expected to remain. It is anticipated that after boundaries have been established a determination can be made that monitoring alone will be acceptable and some form of active contaminant containment system will not be necessary.

Current NDEP Program Activity: In general, staff are responsible for reviewing UGTA-related technical documents. They provide review and project oversight of the UGTA-related work being conducted by DOE and its contractors. Staff also evaluates UGTA budgets and related DOE work programs for items where deadlines and compliance dates have been established.

Staff further develops and coordinates NDEP issues regarding UGTA documents and provides comments to DOE and its contractors with emphasis on technical accuracy and regulatory compliance. Other activities include an evaluation of UGTA-related modeling codes, participation in UGTA-related meetings and workshops, and active participation in the UGTA Technical Working Group (see *below*). Program activities are conducted for the NTS and the Offsite test areas (i.e., CNTA & Project Shoal).

Regulated Community & Program Participants:

- Department of Energy (*National Nuclear Security Administration – NNSA*)
- NTS Community Advisory Board (*CAB- Federal Advisory Board*)
- UGTA Technical Working Group (*DOE contract support, Desert Research Institute (DRI), USGS Lawrence Livermore Lab, Los Alamos Lab, Bechtel-Nevada /IT/Shaw*)

Future Program Activities: DOE, in accordance with the compliance schedule, is committed to continuing the UGTA investigation for at least the next 25 years; the cost of this activity is estimated at an average of \$20 million per year. Thereafter, a long-term monitoring program will be implemented to track any changes in movement in groundwater contamination (i.e., hydrologic boundaries) established under the FFACO process. Issues related to impacted water resources and future water rights will be coordinated with the State Engineer’s office. If contaminated groundwater does move off the NTS, state officials have indicated that a Natural Resource Damage Assessments claim would be initiated.

In the short term, NDEP staff is developing a Long-term Stewardship (LTS) strategy to ensure information about groundwater contamination (i.e., beneath NTS and the Offsites) remains transparent and publicly available. The strategy

will initially entail the development of a special purpose website disclosing detailed program information about UGTA activities and activities conducted at the Offsites testing areas (i.e., CNTA and the Shoal site).

Program Issues: Reducing model uncertainty and increasing confidence in model predictions are most likely the key issues for the UGTA & Offsites program. Although efforts to reduce the uncertainty (e.g., contaminate transport parameters) are being addressed through empirical data collection (albeit at the state insistence), such uncertainties will remain an issue. This is particularly important at the NTS, where contaminated groundwater spans large geographical areas in varying and complex geological settings.

It is worth noting that increased funding to support UGTA investigations remains a priority for the Governors Office. ([See March 2002 Letter to the Secretary of Energy from Governor Kenny Guinn](#))

2. Industrial Sites Project: Industrial Sites generally include surface facilities and subsurface soils that have been impacted by contaminants from related research, development and industrial activities that supported the nuclear testing program. Examples of site contamination include leachfields, sumps, mud pits, disposal wells, landfills and open dump sites containing a variety of industrially-generated wastes. For the most part, industrial sites are confined to the NTS and the Tonopah Test Range. The FFACO is the primary regulatory driver for remediation of industrial sites.

Current NDEP Program Activity: Remediation of the Industrial Sites involves site characterization, selection of applicable corrective actions, and site closure. Corrective actions may be in form of “clean closure” or closure in place. In the latter case, post-closure monitoring is generally required and may consist of collecting samples and conducting inspections to ensure reliability of the engineered and institutional controls. NDEP staff provide oversight of remediation activities for all industrial sites. The FFACO defines industrial sites by Corrective Action Units (CAU). In accordance with regulatory protocols, staff provides written comments on DOE-submitted FFACO documents and plans, and oversee the associated field investigations and remediation activities and post closure monitoring.

Regulated Community & Program Participants:

- Department of Energy (*National Nuclear Security Administration – NNSA*)
- Defense Threat Reduction Agency (*DTRA – Department of Defense*)
- NTS Community Advisory Board (*CAB- Federal Advisory Board*)

Future Program Activities: Because there are over 1,000 Industrial Sites on the NTS where remedial activities are still required, NDEP is obligated under the FFACO to continue regulatory oversight of DOE’S site investigation, corrective action and closure program through the year 2010. It also likely that a significant

number of new Industrial Sites will be added to the FFACO process as DOE/NNSA phase out older existing facilities on the NTS.

Outstanding Program Issues: The “controlled” location of industrial sites on the NTS along with the type and nature of contamination at many sites (e.g. long-lived radionuclides), will result in many FFACO “closure in place” decisions. These closure decisions will require long-term stewardship (LTS) programming, such as selected institutional controls, development of information management systems, and environmental monitoring and reporting. These activities are, to some extent, being implemented at the NTS under the existing management structure. However, DOE headquarters is presently developing a programmatic LTS “management transitioning strategy.” This DOE headquarters initiative is causing LTS program implementation uncertainties at the field office level. Because of these uncertainties, NDEP has yet to fully refine a state role in federal LTS programming for closed contaminated industrial sites at the NTS and at TTR.

3. Radioactive, Hazardous & Solid Waste Management at the NTS: The NTS has been designated by DOE as a regional disposal site for the complex’s low-level waste and mixed low-level waste. This “designation” took effect in February 2000 with the issuance of the [Record of Decision](#) for DOE’S Programmatic Waste Management Environmental Impact Statement (PEIS). The PEIS decision process cost U.S. taxpayers millions of dollars and took more than a decade to complete.

Low-level wastes are being generated (and will continue to be generated) from cleanup activities at DOE sites throughout the country (i.e., from industrial facilities in 15 or more states). These wastes are shipped to the NTS and disposed of at one of two engineered facilities. In 2002 DOE disposed of 2.2 million cubic feet of waste shipped from 18 different offsite generators; the actual number of shipments totaled 1,674.

NTS also stores legacy drums of transuranic (TRU) mixed waste; these wastes will soon be shipped to the Waste Isolation Plan (WIPP) in Carlsbad, New Mexico. DOE is also evaluating alternatives for the disposition of other TRU wastes at NTS (i.e., TRU waste contained in oversize boxes or other containers, which presently cannot be shipped to WIPP, and classified materials/wastes in storage that have no path forward for disposal due to their classified nature).

The DOE presently has a RCRA Part B permit for two units, a Hazardous Waste Storage unit and an Explosive Ordnance Disposal Unit (EOD). DOE is in the process of obtaining approval from NDEP for a RCRA Part B Permit for their landfill facility to receive and dispose of mixed low-level waste from off-site generators. Presently, under interim status, on-site mixed waste meeting LDRs can be disposed in the existing facility. (As you are aware this permit process is being monitored by the Governors Office, Agency For Nuclear Projects.) Finally, DOE also routinely proposes research projects for treatment of mixed wastes

and develops treatment plans for onsite generated mixed wastes that do not meet the LDR requirement.

Current NDEP Program Activity: In accordance with the Agreement-In-Principle (AIP), staff performs joint oversight of low-level waste disposal activities at the NTS. This includes written reviews of DOE documents, publications, and position papers, as well as examination of “waste profiles” from approved DOE LLW generators. Evaluation of waste profiles ensures compliance with the NTS Waste Acceptance Criteria. Staff from the Las Vegas office also participate in the bi-weekly Waste Acceptance Review Panel (WARP) meetings, and conduct disposal site visits and random inspections of low-level waste shipments arriving at NTS. In addition staff participate in DOE/NV’s audits of LLW generators at their out of state facilities.

For mixed low-level waste, staff is currently reviewing a RCRA Part B permit application. The evaluation is both a technical and regulatory activity; the technical evaluation is focused on engineering issues. Staff also maintains the administrative record and reviews RCRA site characterization plans, corrective action site remediation documents and treatment plans. Staff oversight of RCRA waste management activities focus on compliance with the storage requirements for mixed TRU wastes, mixed low level waste and hazardous waste -- which is managed on separate storage pads -- as well as operation of the EOD facility and activities at hazardous waste generator sites.

Regulated Community & Program Participants:

- Department of Energy (*NTS - National Nuclear Security Administration*)
- Department of Energy – Environmental Management (*Headquarters office*)
- Waste Acceptance Review Panel – WARP (*DOE and Contractors review panel*)
- NTS Community Advisory Board (*CAB- Federal Advisory Board*)
- Governors Office – (*TRU Waste Transportation WIPP*)
- State of Washington – (*Dept. of Ecology (Partner – Rod PEIS Implementation)*)

Future NDEP Program Activities: NDEP is obligated to maintain “non-regulatory oversight” of DOE’s low-level waste disposal operations at the NTS (as per [Appendix X of the AIP](#)). NDEP must also complete the RCRA Permit review process for the mixed waste disposal unit at Area 5 in pit 3. Additionally, NDEP is obligated to participate with DOE in defining a path forward for disposition of the stored TRU waste (i.e., TRU waste in oversize boxes and other non standard containers along with the classified material/waste in storage). Of note, disposition of these TRU wastes are being tracked by the Governors Office, Agency For Nuclear Projects. The Governor’s office manages a grant program through the Western Governors Association that funds transportation oversight by the State Health Division, first responder training through Division of Emergency Management, and coordination of law enforcement/motor vehicle issues with the Nevada Highway Patrol.

Program Issues: NDEP should continue to seek a “State/DOE” shared regulatory program for low-level waste disposal operations at the NTS. State regulatory control over DOE’s low-level waste disposal program is the preferred approach over DOE’s current policy of “self regulation.” Under the Atomic Energy Act., DOE is “self regulating” for the treatment, storage and disposal of low-level defense waste. [DOE Order 435.1](#) is the protocol utilized to guide this process. From a legal perspective, DOE Order 435.1 could be characterized as a policy document only; it has not been codified and does not hold the force of law. Conformance with DOE Order is not a legally required activity and is for the most part void of external review. The requirements of the Order can also be waived at the discretion of DOE.

In light of DOE’s self-regulatory process, NDEP must continue to implement the non-regulatory oversight program for low-level waste as defined under the AIP. Continuing this program allows NDEP to independently screen DOE low-level waste streams for acceptable characterization (i.e., identification of mixed waste). In addition, it allows NDEP to ensure DOE compliance with [NTS Waste Acceptance Criteria](#) and thus ensures adherence to the performance assessments for the Area 5 and 3 disposal sites at NTS.

Under AIP, DOE has formally agreed to allow the state to review their low-level waste program and has committed to respond to State concerns -- even though there is no legal requirement to do so under the Atomic Energy Act. In a related matter, if the Yucca Mountain project is realized, significant volumes of low-level waste and potentially mixed low-level waste will be generated from waste handling operations at repository surface facilities. Again, the Governors Office Agency For Nuclear Projects is tracking this issue and remains strongly supportive of NDEP’s non-regulatory oversight program (established under the AIP), as well as actions to acquire shared regulatory oversight of radioactive waste disposal operations at the NTS.

4. Contaminated Soils: Contaminated soils on the NTS, TTR and Nellis Air Force Range were caused by safety shots, cratering experiments, atmospheric tests and hydronuclear experiments. Under the FFACO, DOE has prioritized remediation of soil sites into 20 Corrective Action Units (CAU’s). Prioritization is based on potential risk to the public and site workers. Accordingly, soils sites that are located off the NTS (i.e., on the Nellis Range, TTR and the Desert National Wildlife Refuge) have been given priority for cleanup.

It should be noted that there are no national standards to address cleanup of residual radionuclide contamination in soils. EPA and NRC require that a risk/dose-based site-specific corrective action level be calculated for a given contaminated area (i.e., mimicking the CERCLA process). The appropriate “federal” decision maker, however, must concur with such a calculation. For contaminated areas off the NTS, the U.S. Air Force is the primary decision maker for soil cleanup levels. Establishing these cleanup levels requires an evaluation of a dose based model versus a risk model that also takes into account future land-use scenarios.

Current NDEP Program Activity: Because decisions about land-use scenarios for contaminated soil on the Nellis range have yet to be confirmed, (at least by the appropriate Air Force authority), little [recent] NDEP program activity has occurred in this program area. In fact, federal delays in the soil cleanup project have caused significant schedule impacts. Presently, remediation of contaminated soils is slated to start in 2007 with completion projected by 2023.

Of note, the contaminated soil sites on NTS proper will likely not be remediated, since these sites are located in the designated future testing area. The Long-Term Stewardship implications associated with concurring with “closure in place” decisions for these sites (which number in the hundreds) have yet to be defined.

Regulated Community & Program Participants:

- Department of Energy (*NTS - National Nuclear Security Administration*)
- United States Air Force (*Nellis AFB*)
- United States Air Force (*Headquarters*)
- NTS Community Advisory Board (*CAB- Federal Advisory Board*)

Future NDEP Program Activities: Once again, NDEP is obligated under the FFACO to complete the corrective action process for contaminated soils. This is an important commitment, since contaminated lands on the Nellis Air Force range are temporarily withdrawn through congressional act. It is conceivable that these lands could be released in the future; hence completing remediation activities for soils containing long-life radionuclides cannot be avoided.

Program Issues: Maintaining institutional control over soil sites where corrective actions are not anticipated, such as on NTS proper, can only be assumed if DOE retains perpetuity control over the withdrawn lands encompassing the NTS. Since DOE has not complied with the land withdrawal review requirements stipulated under the FLPMA (Section 204 - Federal Land Policy and Management Act), it cannot be assumed that DOE has perpetuity control over the withdrawn public lands encompassing the NTS. In addition, there has not been sufficient characterization of soil contamination on the NTS and therefore appropriate levels of institutional controls cannot presently be addressed.

Additionally, DOE has not performed a substantive evaluation of alternative soil cleanup levels for contaminated soils generally. Such an evaluation is mandatory per DOE's own National Environmental Policy Act (NEPA) implementing regulations (CFR 1021). As a consequence, NDEP has taken the position that an interim or final decision that establishes different soil remediation levels for different soil sites would be considered a major federal action under NEPA. Accordingly, NDEP contends that DOE must initiate a NEPA process to address alternative Corrective Action Levels for all contaminated soils sites (i.e. , site on NTS, the Nellis Range, and sites on the Desert National Wildlife Range).

5. Environmental Monitoring & Programmatic Oversight: Under the Agreement In Principal (AIP) grant program, DOE provides financial support for environmental, safety, and health oversight, as well as monitoring programmatic activities of DOE's Environmental Management (EM) operations in Nevada and at the national level. NDEP, the State Health Division, and the Division of Emergency Management are the AIP grant recipients. The Governors Office (Agency For Nuclear Projects) is the formally designated "Agency Integrator" for coordinating/integrating state policy matters for state agency recipients of AIP funds.

Current Program Activity: In reference to environmental monitoring, staff evaluates data for air quality (NESHAPS subpart H), groundwater, surface water and water pollution control permits (10 facilities on site) in addition to the waste management activities discussed earlier. Environmental monitoring includes field inspections and document reviews. Staff conducts annual compliance inspections on each permitted facility, reviews all reports of unauthorized discharges or anomalous events, and when appropriate assembles information for non compliant actions. Support for these regulatory activities, for which fees would normally be assessed, is funded through the AIP grant.

At the programmatic level, AIP funds support review of both site-specific and programmatic NEPA documents. Funds are also used to assess evolving missions activities and their subsequent impacts on human health and the environment, as well as programmatic interactions with local and national stakeholders (i.e., NTS Community Advisory Board, the National Governors' Association Federal Facilities Task Force, and the State Tribal Government Working Group (STGWG) ECOS and ASTSWMO Federal Facilities Groups and Radiation Groups).

Regulated Community & Program Participants:

- Department of Energy (*NTS - National Nuclear Security Administration*)
- Department of Energy (*Headquarters*)
- Defense Threat Reduction Agency (*DoD - DTRA*)
- United States Air Force (*Nellis AFB*)
- NTS Community Advisory Board (*CAB- Federal Advisory Board*)
- Governors Office (*Agency For Nuclear Projects*)
- National Governors' Association (*Federal Facilities Task Force – DOE/HQ sponsored*)

Future Program Activities: With the advent of increased defense funding and new mission activities, an expanded environmental oversight program for the NTS is being pursued by NDEP. Over the next decade, new federal programs, including several direct development projects, are planned at the NTS; the proponent agencies are DOE's National Nuclear Security Administration and DoD's Defense Threat Reduction Agency. New mission responsibilities will likely focus on DoD counter-terrorism activities and on DOE "stockpile stewardship programming" (i.e., programs for safeguarding nuclear materials and testing [non-nuclear simulations] the reliability of nuclear weapons). In terms of counter-terrorism, DoD agencies, the national labs, and the new Home Land Security

Department are actively pursuing NTS as a field laboratory for demonstrating/training various counter-terrorism programs.

At the programmatic level, DOE/EM headquarters is transitioning Long Term Stewardship (LTS) responsibilities to DOE'S new "Office of Legacy Management" as well as to the existing NNSA landlords. As noted above, the policy and programmatic implications of this action on LTS planning at the NTS are unknown.

Program Issues: AIP grants to states and tribes that support environmental monitoring and programmatic oversight of DOE activities are currently being "reviewed" by DOE headquarters (i.e., by the Under Secretary for Environmental Management - EM). The purpose of the review is to ensure AIP funds support EM cleanup activities only. NDEP's AIP program is used (although not exclusively) to support regulatory activities that would otherwise be funded through fees. While this approach remains "administratively" successful for both NDEP and DOE-Nevada, a reduction in AIP funding would negatively affect this process. Likewise, a reduction in AIP funds would also limit programmatic oversight of non-EM mission activities, including new missions at the NTS. This would significantly impair the State's ability to ensure DOE follows its own orders and well as all applicable environmental regulations, including compliance with NEPA at the site-specific and programmatic level.

6. Department of Defense (DoD) Programs: NDEP conducts programmatic and regulatory oversight of "cleanup" activities of historic contamination at Department of Defense's (DoD) installations in Nevada and at Formerly Used Defense Sites (FUDS). The defense installations include the Nellis Air Force Base and Range, Naval Air Station Fallon, the Hawthorne Army Ammunition Depot, the Air National Guard facility in Reno, and the Wendover site in north eastern Nevada. Funding is provided from the Defense Environmental Restoration Account (DERA) through the Dept. of Defense State MOA/CA. Annual negotiations occur with each DOD component and the Corp of Engineers for FUD sites. The four separate grant awards are administered through the COE.

Current Program Activity: NDEP staff conducts technical reviews, site investigations, and prepares comments on DoD documents and data related to environmental investigations. Staff also participates with DoD agencies in public participation forums such as the Restoration Advisor Board (RAB) meetings. In addition staff attends regional and national meetings held by major commands of each service for affected states.

Regulated Community & Program Participants:

- Department of Defense Agencies(*Nellis ,Hill, Fallon, Hawthorne*)
- Army Corps of Engineers (*FUDS*)
- Restoration Advisory Boards

Future Program Activities: “Active” military training ranges in Nevada are exempt from remediation for UXO and munitions related contaminants under the present regulations. Active ranges are subject to site characterization and remediation requirements under a DoD managed program (e.g. CERCLA regulatory process and/or implementation of revised “Range Rule”) only after they have been declared excess and are programmed to close. However, Nevada’s ranges, Nellis & Fallon, which are withdrawn public lands do have annual requirements to evaluate all range contamination and report costs for remediation and any work completed. If and when they are proposed for closure, it would be at that time NDEP would participate in the selected regulatory process to insure compliance with state regulatory requirements.

Program Issues: Some of the military ranges in Nevada also had and still have activities ongoing that can release sources of contamination unrelated to munitions. NDEP contends these activities and sites are not exempt even though they are on active ranges (Tonopah and Indian Springs AFBs and some activities on the Fallon Ranges). NDEP continues to insist that the DoD component pursue activities to characterize and appropriately remediate non-munitions sites on the ranges.

Management control of the Installation Restoration Program (i.e., environmental cleanup) within the Department of the Navy for the Fallon program may again become a concern. NDEP spent over a year negotiating a “Partnering Agreement” with all parties and now the Navy is proposing to transfer programmatic authority to a different regional entity. This action will remove the Navy entity that was most responsible for Fallon’s return to an acceptably run cleanup program.

At the national level, DoD has taken issue with state regulatory authorities that are used to ensure the implementation and reporting of post closure requirements for closed contaminated sites. Staff has been working with both ECOS and ASTSWMO to address this issue at the national level.

As DoD cleanup sites are remediated and enter long-term stewardship, existing NDEP staff efforts will be redirected to address DOE projects. This assumption, however, will depend on state regulatory involvement in managing contaminants on active and closed DoD ranges, (i.e., how expended munitions on active and closed ranges are ultimately regulated).